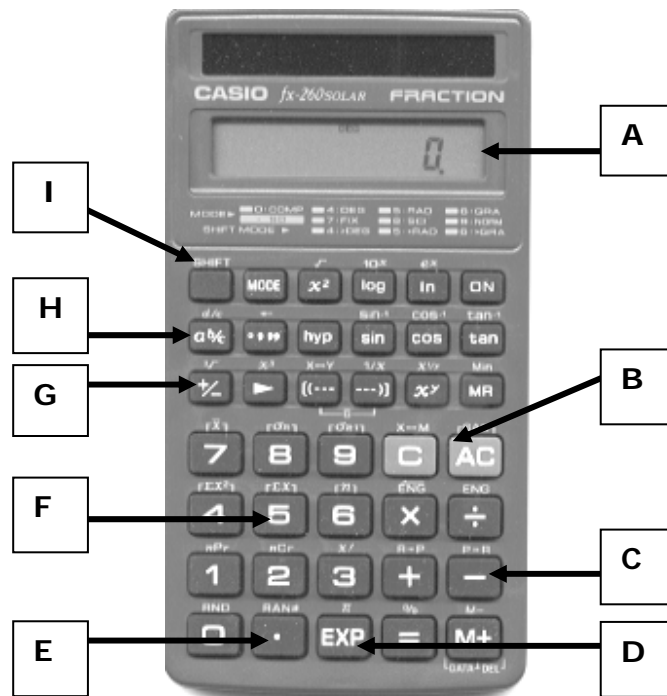


The Casio fx-260 Solar Calculator Guide

The GED Tests have been designed to reflect what graduating seniors know and can do. The use of the scientific calculator is common in most high school level math courses. The GED 2002 Mathematics Test allows the use of *the Casio fx-260 Solar* calculator for Part I of the test. Keys and basic functions found on the **Casio fx-260 Solar** calculator are identified to help you become familiar with the instrument.



- A** – Display panel—“DEG” should appear at the top-center of the screen
- B** – Clear and All Clear keys are shown in red
- C** – Basic operation keys for addition, subtraction, multiplication, division, and equal
- D** – EXP—Displays the most commonly used number for pi—3.141592654
- E** – Decimal point
- F** – Number or digit keys
- G** – Four keys to remember:
 - +/- changes a positive number to a negative
 - → backspace key
 - ((... open parentheses
 - ...)) close parentheses
- H** – a b/c - Fraction key
- I** – Two keys to remember:
 - Shift—use in combination with another key
 - x^2 —squares a number or with the shift key calculates square root

Steps to Remember When Using the Calculator

When taking the GED 2002 Mathematics Test, check your calculator by:

- Opening the calculator.
- Visually check for any defects in the solar panel, screen, and keys.
- Pressing the “ON” button (upper right hand key).
- Checking that the display screen shows “DEG” in the upper center of the screen and “0” at the right. If the calculator is in an alternate mode, press the “Mode” key and the “4”. This will shift the calculator to the appropriate mode.
- Pressing the AC (Clear All) key. This will delete all previous information.
- Pressing the number 8 and fill the entire display screen. This will ensure that the display is working appropriately and that all numbers will be displayed properly.
- Checking for proper order of operations by completing a basic problem such as:
 $2 + (6-4) \times (10 \div 2) = 12.$

Basic Key Functions of the Casio fx-260 Solar Calculator

ON	Power On	AC	Power On/All Clear
C	Clear	▶	Backspace Key
.	Decimal Point	3	Digit or Number Key
SHIFT	Use in conjunction with another key to change function		

Basic Calculations

+	Addition	−	Subtraction
x	Multiplication	÷	Division
=	Equal		

Special Keys

a b/c	Fraction key	+/-	Sign Change
%	Percent Key = SHIFT + =	√	Square Root = SHIFT + x^2
EXP	Exponent	x²	Square
((...)	Open Parentheses	...))	Close Parentheses
Π	Pi or 3.1415926536 = SHIFT + EXP		

Using the Casio fx-260 Solar

Basic Calculations

GED Math problems can be divided into two types of calculations, basic and advanced. The following examples utilize basic calculations such as: addition, subtraction, multiplication, and division. Use each of the following problems to help students become familiar with basic calculations. Always have students press the ON or AC buttons prior to starting calculations.

Example 1: $12 - 3 + 8 =$

Before beginning, always press **ON** or **AC**

Enter the following: $12 - 4 + 8 =$ (Correct answer is 16)

Example 2: $4 \times 5 + 6 - 2 =$

Enter the following: $4 \times 5 + 6 - 2 =$ (Correct answer is 24)

Example 3: $4 \times (6 + 2) - 10 \div 2 =$

Enter the following: $4 \times ((\dots) 6 + 2 (\dots)) - 10 \div 2 =$ (Correct answer is 27)

Example 4: $-9 + 2 =$

Enter the following: $9 [+/-] + 2 =$ (Correct answer is -7)

Advanced Calculations

The second type of calculation used on the GED Mathematics Test is advanced calculation. Advanced calculations require the use of operations such as fractions, percentage, square, and square root. These calculations require the student move beyond the basic number or digit keys and simple operations.

Fractions

When students use the scientific calculator to solve problems dealing with fractions, they must learn how to use the fraction key. Fractions are entered in two ways:

- Simple fractions such as $\frac{1}{2}$ are entered as:
 $1 \text{ [a b/c]} 2$
- Mixed numbers such as $1 \frac{1}{2}$ are entered as:
 $1 \text{ [a b/c]} 1 \text{ [a b/c]} 2$

EXAMPLE 1: $\frac{1}{4} + \frac{2}{3} =$

Enter the following: $1 \text{ [a b/c]} 4 + 2 \text{ [a b/c]} 3 =$ (Correct answer is $\frac{11}{12}$)

EXAMPLE 2: $1 \frac{3}{4} + 2 \frac{1}{3} =$

Enter the following: $1 \text{ [a b/c]} 3 \text{ [a b/c]} 4 + 2 \text{ [a b/c]} 1 \text{ [a b/c]} 3 =$
(Correct answer is $4 \frac{1}{12}$)

Percents

Students may use the scientific calculator to solve problems dealing with percents. The scientific calculator makes it easy for students to determine percentage increases and decreases.

Example 1: 10% of 340 =

Enter the following: 340×10 **SHIFT** **=** (Correct answer is 34%)

Example 2: Add 30% to 2,700

Enter the following: 2700×30 **SHIFT** **=** **+** (Correct answer is 3510)

Example 3: Decrease 2140 by 15%

Enter the following: 2140×15 **SHIFT** **=** **-** (Correct answer is 1819)

Squares

The scientific calculator has a special key that enables the student to easily find the square of a given number. To find the square of 12:

First enter the number 12

Next press the **x²**

The correct answer is 144.

Square Roots

To access the square root **√** key, the student must first use the **SHIFT** then press the **x²**.

Example 1: $\sqrt{16}$

Enter the following: 16 **SHIFT** **x²** = (Correct answer is 4)

Example 2: $4^2 \times (3 + 4) \times \sqrt{6} =$

Enter the following: 2 **x²** **x** **((...))** $3 + 4$ **...))** $\times 6$ **SHIFT** **x²** =
(Correct answer is 274.3428512)

Important Points to Remember!

1. The Casio fx-260 Solar Scientific calculator performs operations in the correct order. However, it is important to understand the basic principles involved, especially when you want to check your calculations using paper and pencil. The mnemonic expression “Please Excuse My Dear Aunt Sally” is an excellent device to help you remember the correct order of operations.
P – Parentheses and other grouping symbols, innermost first,
E – Exponents and square roots,
M, D – Multiplication and Division in order from left to right, then
A, S – Addition and Subtraction, in order from left to right.
2. To be sure that you are starting clear for a new problem ALWAYS press the **ON** or **AC** keys prior to starting calculations.
3. To be sure that your answer showing on the screen is the final answer, ALWAYS press **=** key to end the calculation.
4. Use estimation to check answers for reasonableness.
5. Problems including fractions and decimals will always have a decimal answer.
6. To change a fractional answer into a decimal, after completing the calculation and pressing the **=** key, press the **$\frac{\square}{\square}$** . The final answer will appear as a decimal.
7. When evaluating fractions, placing separate parentheses around the numerator and the denominator will help keep the correct order of operation.
8. Unless it occurs in the first position, any grouping symbol must be preceded by an operational symbol. When no symbol is present, it is understood to be multiplication.
9. The most important thing that you can do as the GED student is to use plenty of practice time. Use the calculator to solve real-life problems. Extend activities beyond the classroom and use the Casio fx-260 Solar Scientific calculator at home or in the workplace.
10. Last, but certainly not least, PRACTICE, PRACTICE, PRACTICE!!!

Upside Down Calculator

Procedures:

1. Perform each of the indicated computations on the calculator.
2. Turn the calculator upside down and read the word answer.
3. A clue is given for each problem.

Calculation	Numerical Answer	Clue	Word Answer
0.140		A name of a state	
$15 + 2 + 150 + 95 + 55$		His story was a	
$2101 \times 9 \times 2$		An important book	
2538.67×2		They said a lot of	
$501 \div 12500$		After peeling onions you would	
$(354 \times 15) + 7$		What you should never tell	
$141 \div 200$		The baritone sang	
$48450 \div 6$		A messy person	
$40 \div 99$		What Santa Clause said	
$88^2 - 3^2$		Opposite of buy	
$(362536 + 61) \div 71$		A girl's name	
$463 \times 79 - 1469$		The capitol of Idaho	
1911×3		Snake-like fish	
$15469 \div 20000 + 190 + 520$		The name of an oil company	
$19^3 + 879$		It rings	
$514 + 3237$		A tropical	
$106 \times 35 - 5$		The bottom of a shoe	
$84^2 + 7^2$		To make dirty	
1377×4		Person in charge	
$(29 \times 16 - 1) \times 8$		This is a big	
$625 \div 5/23 + 2463$		They sting	
$(9 \times 20) - 7$		What Whitney was called	
$11 \times 7 \times 40$		Musical instrument	
$\frac{1}{2} \times 500 \times 140 + 7$		Opposite of tight	
$\sqrt{625} \times 2564 - 6382$		Have to be paid each month	

Follow-up—Make up some problems like this of your own.

Upside Down Calculator—Answer Key (Words)

OHIO
LIE
BIBLE
HELLOS
BOOHOO
LIES
SOLO
SLOB
HOHOHOHOHO
SELL
LOIS
BOISE
EELS
SHELLOIL
BELL
ISLE
SOLE
SOIL
BOSS
HOLE
BEES
ELI
OBOE
LOOSE
BILLS

Calculator Tic – Tac – Toe

Play calculator tic – tac – toe! Choose a partner to play against. The first player chooses a number from 1 to 25. The player completes the calculation. If the answer is one of the numbers in the square, the player marks that square with either an X or O. It then is the next player's turn. If the answer is not in a square, the player loses that turn and it becomes the next player's turn. Alternate until someone has tic – tac – toe! The game can be played repeatedly.

189	87.5	-3
25	10	12.5
-66	4 5/6	7/16

1. $10(3 + 12) + 39 =$
2. $100 \div (12 - 8) + 62.5 =$
3. $3\frac{1}{2} + 4\frac{2}{3} - 3\frac{1}{3} =$
4. $(3.59 + 4.2 + 7.9) \div 3 =$
5. $(2\frac{5}{8} - 1\frac{3}{8}) \times 4 + 20 =$
6. $(\frac{3}{4} + \frac{1}{8}) \div 2 =$
7. $\frac{1}{2} \times \frac{7}{8} =$
8. 4 is 16% of what number?
9. What is 125% of 70?
10. 10 is what percent of 80?
11. Subtract a 15% discount from \$180
12. What is the increase from \$147.50 to \$162.25?
13. What is the decrease from 32 to 24?
14. $15 - (-35) =$
15. $(7)(3) + (-7)(-7) - 3 =$
16. $(-12) + (-31) + (-23) =$
17. $(-2)(6\frac{1}{4})(-7) =$
18. $5x + 2 = -13$, $x = ?$
19. $5^2 \times 3^2 - (-6^2) =$
20. $\sqrt{9} =$
21. $4\frac{5}{6} + (4\frac{5}{6} \times 2) - (9\frac{2}{3}) =$
22. $7.5^2 + \sqrt{100} - (-21.25) =$
23. $33 + (-99) =$
24. $(-35 \times 7) + 179 =$
25. $2 \times 1\frac{1}{5} + 4 \times 2.5 - 2\frac{2}{5} =$